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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,832	12/21/2001	Rod Fensom	27581/99215	4938

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EXAMINER

GIMIE, MAHMOUD

ART UNIT PAPER NUMBER

3747

DATE MAILED: 03/24/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/036,832

Applicant(s)

FENSOM ET AL

Examiner

Mahmoud Gimie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-17 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,8,9,13,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 3,5-7 and 10-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 9.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Overview of Office Action

1. The Finality of the Office Action mailed on 12/29/03 has been withdrawn in view of the telephonic interview conducted on 1/15/04.
2. Claims 1-19 are pending in this application.
3. Applicant's timely response to Office Action mailed on 1/27/04 has been received.
4. As per attorney's follow-up telephonic conversation, the content of the Office Action mailed on 1/27/04 was for different application; therefore the original Office Action intended is hereby remailed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. Claims 1,2,4,8,9,13,18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki (4,280,471) in view of Rasmusson (5346173).

Masaki discloses (figure 2) an exhaust gas recirculation valve (156) comprising: an exhaust passage tube (154, 160); a valve element (162) pivotally mounted within the exhaust passage tube; a reversible motor as an actuator (168): and a gear train (166) operatively connected to the actuator (168), the rack gear adapted to move in a substantially linear direction upon activation of the linear actuator, and at least one rotatable gear (col. 11, ll. 29-30) meshing with another gear and operatively connected to the valve element (162) to cause rotation of the valve element (162) upon actuation of the actuator (168).

Masaki does not show a linear actuator.

Rasmusson discloses a gear train including a rack gear (10) operatively connected to a linear actuator (9), the rack gear (10) adapted to move in a substantially linear direction upon activation of the linear actuator (9), and at least one rotatable gear (22) meshing with the rack gear (10) and operatively connected to a shaft (11) of a butterfly valve or the like, abstract, ll. 2-3.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Masaki by substituting a linear actuator for butterfly valve as disclosed by Rasmussen. The motivation to do so would have been to provide an actuator having a very simple design that can generate a large torsional moment, see col. 1, ll. 44-46, of Rasmussen.

With regard to claim 2, the linear actuator will be mounted to the exhaust passage.

With regard to claim 4, the rack gear (10) includes teeth (27) disposed on a rod directly driven by the linear actuator (9).

With regard to claim 8, see below.

With regard to claim 9, the valve element is mounted to a spindle (11) and the gear train includes a rotatable gear (22) mounted to the spindle, see figure 2 of Rasmussen.

With regard to claim 13, the rack gear (10) is disposed along at least a portion of the length of the actuator rod.

With regard to claim 18, a method of actuating an exhaust gas recirculation valve (156), the method comprising the steps of: activating (energizing: giving energy to) a linear actuator (9); moving a rack gear (10) operatively connected to the linear actuator (9); and rotating at least one rotatable gear (22) operatively connected with a valve element to thereby rotate the valve element.

With regard to claims 8 and 19, using a solenoid as an actuator is an obvious design choice because applicant has not disclosed that a solenoid provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, further, would have expected applicant's invention to perform equally well with the disclosure of Rasmusson because it provides a linear actuation to turn a shaft of butterfly valve.

Response to Arguments

7. Applicant's arguments made on 1/15/04 telephonic interview with respect to the rejection(s) of claim(s) 1, 14 and 18 under 102(b) and claim 19 under 103(c) have been fully considered and found to be persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rasmusson.

Allowable Subject Matter

8. Claims 14-17 are allowed over prior art of record.
9. Claims 3, 5-7, 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references show linear actuators.
11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Gimie whose telephone number is 703-305-1037. The examiner can normally be reached on 7 a.m. -3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on 703-308-1946. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

A handwritten signature in black ink, appearing to read 'Mahmoud Gimie', with a stylized flourish at the end.

MAHMOUD GIMIE
PRIMARY PATENT EXAMINER
ART UNIT 3747

M Gimie